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From the Editor



One of the interesting stories just forward by Robert N. Cragley is his book *Accidental Empire*, in that the death of the mainframe computer will occur on December 31, 1999. According to Cragley, much of the original software code which was written for these mainframe computers in the '60s and '70s has been lost, and no one even imagined that they would be running into the year 2000. His story of this software programs are "hardwired" with date and time structures that will fail—or worse, be incorrect—on the year 2000.

Whether this is true or not, many large organizations are dreading and they are looking for the right operating system and hardware to run their mission-critical applications on. This demand, pressure in combination with a growing sophistication from personal computer users looking for reliable multitasking, multitier computing. The battle over the next few years looks down to OS/2 versus Windows (NT) versus the Unix variants.

Intel vs. RISC?

Computers have been looking up to the challenge. The options fall into two main categories: 1) all the operating systems that will run on last-Intel-based 486 and Pentium CPUs chips, and 2) those that will run on proprietary RISC-chip based systems. Offering high-volume, low-cost Intel hardware are Windows NT, OS/2, NetWare, SunSoft, SCO Unix, DecPlex N. At the other end of the spectrum fall Sun, more expensive RISC-chip hardware based systems, usually those on proprietary boards by Sun, NeXT, HP, DEC among others. What these systems offer is comparable pricing to Intel-based in the low end, but a much higher higher end both in performance and price.

Who Wins?

OS/2 is not already and is finding reasonable success. Microsoft is shipping the developer version of Windows NT and will probably deliver the real thing early in 1995. SCO has a new version of their Open Windows that one wonders if they are seriously competing when the operating system runs on 486 and up compared with the 386/486 range that IBM and Microsoft are targeting. SunSoft and NeXT have both delayed their products until early next year.

Whether Unix?

Unix has been hailed in the last few years as the solution, because it supposedly offers Open Systems and has many of the industrial-strength features needed for corporate computing. Unfortunately the Holy Grail of a large base of "value is missing" Unix, expensive software licenses often. You still can go down to your neighborhood software store and buy a copy of Word, Lotus 1-2-3 or dBASE that will run on 486 Unix, Sun Unix and NeXT Unix. The "value" of opportunity is rapidly changing as Unix OS/2 is being more often many of the features of Unix in a format that is not as formidable in the end user as Unix. Windows NT, which promises to have a similar robustness, will emerge early next year and will be a logical upgrade path to millions of Windows users. It is already too late for Unix!

Sign the name

Brian Singh

Brian Singh, Editor
Publisher/Editor

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WHAT'S NEW

Check the warehouse without leaving your desk

Hartwick's Computer Solutions of Concord, Ontario has developed new software as an alternative to visiting clients that will allow users to actually see in-house pictures of what's on their shelves when they call, for an average \$200,000 to \$400,000.

Using what Hartwick calls "interactive imaging," Hartwick's Advantage Vision 3.5 will allow users to spend images from

a camera, video camcorder or PC camera in the interactive catalog module. It might also be used to add pictures of employees in payroll records, portraits of participants in retirement records or with hotel or alternate names in real time submissions for flight or car rental spots.

Contact Hartwick at (916) 798-4388.

Genie now available on Canada's Datapac

General Electric's Genie online information service can now be accessed through the national Canadian Datacube market-making system. It means that Genie can now be dialed up directly as a local telephone call in more than 200 Canadian cities—including Toronto, Calgary, Edmonton, Vancouver and Winnipeg. Those cities of course are subject to

Genie's Fortran-based Canadian nodes. To use the Datapac system, dial the local Datapac number in your city and enter 557684. It is a network user solution if you live in Eastern Canada, and 8148855 if you live in Western Canada.

Contact Genie 1-800-435-4343.

Toronto company develops improved color PostScript print controller

Outpacing color images in PostScript printers has meant facing a complex task. Getting accurate, properly registered color work often poses a challenge for desktop publishing houses.

Developments in color technology have made this challenge all the more acute—particularly given the use of 24-bit color files. The bugle call of these files alerts that they can tie up output devices for extended periods of time while they are printed out.

Graphic Links of Toronto is offering a new series of PostScript-compatible print controllers developed in Canadian software experts Quantum. It requires speed by taking the image from the PC to the output

device more quickly and by using the software built into what Graphic Links calls the "hardware" PostScript controller to process the image more quickly and get it ready to print.

Graphic Links says that with the Quantum print controller, standard laser image processors (RIPs) are not needed, and non-PostScript printers can be used to print PostScript files. Quantum will operate with a wide range of color and laser printers, dye sublimation printers, photos line reviewers. Colors color copiers (both the 5542M and the 5544), inkjet and dot matrix printers.

Contact Graphic Links at (416) 522-4727.

Industry leaders help plan 1992 Canadian Computer Show & Conference

Organizers of the 1992 annual Canadian Computer Show and Conference, to be held at Toronto's International Centre November 23-25, are launching the use of a top-flight "voluntary commit" to plan the show.

Members of this voluntary commit include representatives from IBM, Microsoft, Compaq, Canon, Minolta, Computer Associates, Dell, Lotus, Borland,

Egilys, the IBM Group and Sharp Electronics. A few changes have already been indicated: the show will run three days (rather than the usual two) and early day will concentrate on different types of equipment (e.g., CD-ROM technology, network and distribution applications).

Contact these planning staff details at (416) 461-1664.

Computer Visions Videotape

Computer Visions is a new videotape of computer animation that gives behind-the-scenes and before-the-scenes technological information through its twelve rapid developments. The video shows us computer animation from its early use in such domains like in astronomy, surgery, earth science, advertising, environmental studies, medical research and much more.

The 14-minute video contains through a wide range of styles and themes to educate and entertain the viewer. It is produced by Pacific Arts of California, and is distributed in Canada by Toronto's NCCO. For \$29.95 + \$5 shipping.

Contact 1-800-467-1849.

GET 486 SLC2 POWER FOR \$299.

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386 or 486? If you're looking for faster for your end users, here's an offer that'll make your decision simpler. Buy an IBM PS/2 586 SLC2 (Model 56 or 57) before September 15th, and we'll give you

up to 486 performance with an SLC2 TurboCap for only \$299.* The 486 SLC2 TurboCap doubles the clockspeed of your 486 (33 MHz to 50 MHz) and will let you run Lotus 1-2-3, for example, four times faster than you could with a 33-MHz 386.*

So if you want 486 performance without paying 486 prices, buy an IBM PS/2 at your IBM Authorized Dealer. Or call IBM Direct at 1-800-465-7799 to locate the dealer nearest you.

*Under direct IBM Direct at 1-800-465-7799 or in your local office or at an IBM Authorized Dealer. City availability only. System PS/2 586 configuration using 7011 base model. IBM and PS/2 are registered trademarks of International Business Machines Corporation. SLC2 and TurboCap are trademarks of IBM Corporation. © 1992 IBM Corp. IBM and PS/2 are registered trademarks of International Business Machines Corporation.

what you are offering is a fact. You may get the adjustable rate and compare loans to take some of the pressure off your back. It tells for \$65, it was a number of back-pays outdoors, please go to try it out. One gets into a new deal, limited, saving 5% to 10% savings."

Contact: FRAGA-CHEN (914) 440-0400.

Color Notebooks

Three Computers is fast off the mark with over 100 color and 400 color notebooks. These are the first color notebooks to have color from the inside out—three notebooks (Shell, Conquest, Sharp and Turbo) have been out with them for a while. But I don't think it's in the picture on the date is a something else on Canada. They are the Sharp 215, which had off to quite one notebook color for \$1200 on the 14000 series and \$400 on the 14000 series. One dealer who dropped out back to the book to see the again, mentioned that his only problem with dealing with 3Com is that they keep lowering the unit price without telling him—customer support. Contact: Ultra Computers (416) 254-4000.

Fax on Demand

IBM's Telephones Inc. was demonstrating on Fax-on-Demand system. This 21 000 system allows telephone service business and other companies to set up a multiple telephone system that gets them fax on demand. You dial the number through a computer main select, you request them for number and then they in real time fax number, and hang up. The system will call you back and fax you the address of several documents are requested. In fact, it's developed, it's \$1100, \$200, \$200, \$200, and it's the best of five systems tested last in February of 1991. Contact: IBM's Telephones (914) 621-4541 or City-Com Communications (416) 424-4541.

Other interesting products of note included SuperTime, a DOS-based office productivity package from 3Com-based SuperTime Inc. (416) 490-2244, and DataStream Corp's (416) 341-1745 Windows-based finance document mapping and filing software.

Definity Instant Accounting

Definity Canada was there showing off its new low-cost financial accounting products. The \$69.95 package is unique in offering both Windows and DOS versions in the same box. The files remain compatible in both directions. Apparently Definity felt that its original product, Definity Accounting, had matured beyond being an entry-level product, so it wanted to make the pricing up towards the mid-range, over the next few months.

Contact: Definity Canada (905) 940-0004.

Log on to your Bank

The first bank was on hand to demonstrate its Windows 95 software product. This software package allows TDF to connect customers to bank on the range of their business activities by modem. Users can monitor up to three accounts and up to 10 days of history for about \$45 a month. The best feature of this system is the ability to see monthly statements immediately at the month end, and you have to wait for a statement to be processed in time. There are a variety of other added features including more timely support reporting and transfers between accounts.

Contact: your local Toronto Commerce bank.

Financial Forecasts for your Business

Product: Wilton Ltd was happily showing off its new version of Proforma Plus software. This financial forecasting model runs on Quantum Pro or Lotus, and allows users to prepare complete financial forecasts in a very short time. The developer says that Proforma Plus can calculate bank credit lines and profit/cash flow forecasts. It even takes off the taxes for you. \$179.95.

with a free 30-day trial period.
Contact: Product Makers Ltd (416) 294-2239.

What will that Mortgage Really Cost?

Business Logic Corp. has launched a new version of its financial calculator. The new version, The Financial Calculator—Professional, adds features to any user value money calculator. Imagine you need the bank rate a house together. The bank is

charging you 11.75%, interest is a good deal when you get into it, but the bank has your share. For any year you can get 10% rate. The only problem is the bank wants to charge you a new house to a house rate. It's worth it to make more or less all December 1991 for most of the year. The Financial Calculator will tell you the amount. Contact: Business Logic Corporation (510) 264-0977.

What you, Canada, Canada, 95 will add plus a year 1991 in the West. Conquest, Conquest and will be made up of three charts. Western, Western, Corporate Computing and LAN logs.

Contact: The Western Group (914) 440-0400.

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Running UNIX on your PC

BY KENNETH CLARK

Running Unix on your PC will take full advantage of the 32-bit architecture of Intel's 386/486 processor, and can turn your personal computer into a workstation-class machine. Of course, IBM's OS/2 and Microsoft's yet-to-be released Windows NT also promise to unleash the power of your 32-bit PC. What then does Unix have to offer over these new operating systems? The answer lies in Unix's maturity and widespread acceptance.



The AT&T Open Desktop Personal System

What is Unix?

The Unix operating system based on Unix-like beginnings in a 1962 PDP-7 at Bell Laboratories in 1969. Since then, it has become by far the most popular operating system in the workstation market, used by such names as Hewlett-Packard, Sun Microsystems, NeXT, Digital Equipment Corp., Silicon Graphics, and even IBM.

Unix games your workstation/multitasking capability which means it can allow you to perform a large data process in a background thread, and give them with networked or networked, all without breaking a sweat. Unix also has a built-in networking system, and runs a powerful graphical window called the X Window System.

If you are a software developer, Unix includes powerful development tools and can be used as a cross-development platform for other architectures and operating systems (even DOS).

Many programs written for Unix can run on DOS workstations or can be made to run with little or no modification on your 386 Unix. Through the efforts of model-assisted systems companies such as AT&T and PDS, software written for Unix today will be able to run on a wide range of hardware well into the future. In the interim, it is because the workstation and PC worlds clash, such portability considerations will become all the more important.

It is fair to say that DOS classes in use Unix on its 80486 system/4860 graphical workstations rather than OS/2 or Windows NT will be able to run on a wide range of hardware well into the future. In the interim, it is because the workstation and PC worlds clash, such portability considerations will become all the more important.

If you are already in the market for a workstation, it is worth your while to look into running Unix on a 386/486 as opposed to purchasing a system from DEC, Sun or IBM. The current competition in the PC market has driven down the price of computer hardware to the point where you can buy performance equivalent to a \$15,000 workstation for under \$4,000.

Which Unix?

Open to you is decided you want to run Unix on your 386 or 486. Unfortunately, buying Unix for your PC is not quite as easy as walking down to your local computer retailer and pulling a box off the shelf.

Over 30 years, the Unix operating system has had a long and complicated evolution, and in a small Unix can be found in a number of different flavors, most notably System V (SUS), and Berkeley (BSD). BSD Unix V was developed at AT&T, and is now in the hands of Bell Systems Laboratories (BSL) as AT&T System V. It was developed at the University of California (Berkeley) and most of its software is now public domain.

In what follows I offer a brief outline of some of the SUS and BSD products available for the 386/486. Most of these are based on System V release 4 (SUS4) from IBM, and because we very much as to run of these note that in the source code that makes up the operating system and features. When shopping for Unix, the things to watch for are compatibility, support, and of course price.

All the System V Unix implementations reviewed claim they are "640 memory compatible." This is really just a euphemism for the fact that they are all based on the same AT&T code, but is important because some software is written specifically for SUS (SUS 4) and some for the BSD Unix. And you'll have to make sure the software you want will run on the system you buy. All of these Unix implementations also claim POSIX compliance in getting source code from a workstation or workstation should be fairly quick on as long as the code conforms to the standard.

Proving Unix can be quite confusing. Modern computer systems by changing differently depending on whether you plan on using files (which is a personal option) or a multi-user system. To make things more confusing, often changes must be compiled, developed in systems, or working and X Windows.

Unfortunately, buying Unix for your PC is not quite as easy as walking down to your local computer retailer and pulling a box off the shelf.

If you are unfamiliar with Unix, it is a good idea to buy an introductory Unix book to help you determine what features you are interested in, and then find out from the vendor or your dealer exactly what that system will cost. If you are familiar enough that you can afford the big bucks, you will want to know how much you can pay for that "complete" system. (Ignoring how you often cost as much as a whole new system.)

Commercial Unix Version 1.1

Copyright 1990, December 14, 1991
IBM 386/486

Commercial is one of the first major proprietary UNIX/Linux implementations on the market and supports the few long for the back. They have recently included most AT&T version 4.3.3, with some of the modifications. However, this system includes an improved set of features, a development system, full networking and some limited extensions, and X Windows (X11) is not included.

The price (three phone support, mail installation, for a maximum of 30 days, after which they charge for the full hour of phone time). That also three support \$400 or \$1000 (SUS4). There support is reported to be the the things which you can connect your phone to handle the support. Commercial, along with other Unix Technology (SUS), are good responses alternatives to SUS.

IBM System V Release 4 Issue 5.1

IBM Computer Architecture, 1991
IBM 386/486

IBM has extended some efforts to improve upon the SUS4 code. They have been managed to support a number of missing bugs and modifications. This system is said to run significantly faster than SUS4 code.

They also include a few add-ons with three time units, including a DOS bridge and two of the features. It would be more than happy to sell you hardware with about Unix (which is) and this may be a good idea if you don't want to bring a 10000 price tag on your hardware. However, buying IBM's hardware can reduce your a hardware cost hardware compatibility.

They offer 30 days free phone support and nearly instant answers are available in 10000 for an additional system. But they support that IBM can now-IBM hardware but only for software problems, or if you encounter any hardware incompatibilities.

If you are using DOS or Windows right now, you might consider moving to IBM's OS/2 or Microsoft's NT in the next few years. You also might consider migrating to some form of Unix, such as SCO Unix. What could persuade you to jump?

Planning For the Future

Preparing for OS/2 and NT

BY ROCKY GREEN

Introduction

Nearly always, customers ask me, "What can I buy a machine today that will work in the future with IBM's OS/2 or Microsoft's new operating system, NT?"

I will be looking at two options from three angles:

1. Why would you ever want to move to OS/2 or NT?
2. What sort of machine would you need today to run these new operating systems?
3. How can you buy a machine today with a good chance of being upgraded to work with future operating systems?

What are the possibilities?

If you are using DOS or Windows right now, you might consider moving to IBM's OS/2 or Microsoft's NT as the next step. But, although I consider migrating to some form of Unix, such as SCO Unix. You might decide to invest your computer as-is in the heart of a LAN—a file server. What could persuade you to jump?

1. You want the powerful new applications coming along that will need the powerful range of file name opening systems.
2. You need to smoothly run more than one program at a time.
3. You need a stable operating system that does not crash.
4. You have application programs that require huge amounts of RAM and complex logic, and want to bring every last drop out of your CPU, RAM and hard disk drives.

Why stick with DOS?

The main reason to stay put with DOS is to avoid the complexity of setting up a multi-tasking operating system, although until they are too big, they are almost as easy to operate. Multi-tasking operating systems require huge amounts of RAM and need this space. If you don't need to multi-task, there is no reason to get that involved.

Though, as I already said, DOS and Windows 3.1 programs will tend not to work on OS/2. In practice, most file name opening Windows 3.1 programs will run on OS/2 OS/2, though IBM hopes have them working by September. You will see many OS/2 file names that you can program that run on many OS/2 made. This means having new software applications.

OS/2 is a much better choice hardware. Many consider one that needs less than DOS/2.1, appropriate from the OS/2.

Don't just move to OS/2 because your file name. If you want simplicity, stick with DOS.

What's the matter with DOS?

DOS was a single mode user of the earlier CP/M operating system. Microsoft designed

DOS when IBM looked like an apparently large amount of RAM, and when only multi-tasking computers had hard disks.

DOS was designed for simplicity. Only one program at a time could run. DOS knew only about the first 640K of RAM.

Since then, we have talked up the idea for its support. DOS is functionally while preserving compatibility with other programs. For example, we added hard disks by telling DOS they were giant floppies. This was not very efficient, but it worked.

We added an memory pool RAM, as extended IBM RAM for allowed programs only to get at it. IBM is in time, making a almost useless for moving code. We added a memory manager like QEMM and 386MAX to allow bits pockets of RAM in the region between 640K and 1 MB to be explored. The memory RAM device to the RAM those 1 MB could be used to more data. There is still an way to put programs in the memory above 1 MB. With DOS 5.0, we learned how to do more RAM and used a special RAM region just above the 1 MB mark called the HMA.

We tried to make DOS run more than one program at a time. The first programs of this type were DOS (operating). There are no official rules for interactions between TMS. Only one program at a time can run. DOS to do work on a hard disk. Unfortunately, there is no good way for a program to tell if DOS is busy-working the same other task.

We tried using multi-tasking such as DOS/2.0 to run several programs at once. IBM's DOS/2.0 was already to keep the same programs from interfering with each other. Because DOS/2.0 is based on top of single-tasking, it can't do better of work within some crashing down when one program fails.

Since DOS can do work for only one program at a time, everything comes to a grinding halt any time any program uses the floppy disk. All must wait up to the floppy I/O to complete. DOS can do any other work—such as install a hard disk.

In summary, because Microsoft designed DOS to hang up, it is a matter of installing today's hardware. When you attempt to use DOS to run more than one program at a time, it is a disaster.

What's the matter with Windows?

Windows tries to solve the problems of DOS, but adds new ones of its own. Windows uses an input DOS but does not use DOS's work for it, providing a rich environment for programs.

Windows multi-tasking and screen display, but a costly complicated layering and handling system. This no longer used in that one of each individual program supports your printer or screen. If Windows supports them, then automatically all Windows applications program the way Windows allows programs to launch the DOS kernel and use the RAM above 1 MB for code. However, it remains a priority for this issue. All programs must be broken into small chunks to be bigger than 640K code in the "real" old DOS disk, a program could still use the DOS system.

Windows wants to stay in line as a time, making the last 12 bit of the RAM and 640K thing. Windows only use half of each 16MB segment.

The biggest problem with Windows is that it does not all programs use one big pool. If any program misbehaves, it can cause other to misbehave. A typical Windows screen

is a map controlled by hundreds of other who fight over their use. It is a wonder it works at all.

Windows is a GUI (graphical user interface), in your own use in per use made of hundreds of thousands of data. This is not a small amount. The old DOS port-IO needed, as you need a linear I/O, more RAM and special video hardware to get over close to the speed you expect under pure IBM on a really old hardware. In fact, the GUI offers graphics and screen use cheap, one and reduce you could save and.

Why OS/2?

Microsoft and IBM use of these machine with DOS and Windows and decided to create OS/2 from scratch to solve them. This led much longer than anyone expected. The result was OS/2.0.

OS/2 has the many things it does. It can be running a floppy while it reads one different disk drive, while simultaneously it prints the screen. It can be doing work for several programs at once in a lot of ways. OS/2 is soon to be installed. This means faster, smoother, better programs.

OS/2 has four kinds of programs: single DOS programs.

Local Windows 3.1 programs that use 3.11 OS/2 but OS/2 version 1.5 programs.

4-in-one OS/2, OS/2 3.2 programs.

In native OS/2 mode, we finally use the full power of the OS/2 and IBM chips. Programs can be up to 4 gigabytes long. Programs use all the registers, and all the memory, directly with no floppy, such as RAM or RAM. This means OS/2 finally unleashes the raw computing power of the IBM CPU. Unfortunately, much of OS/2 code is hidden from the application programs, continues to run in the old 386 mode.

OS/2 keeps each program in its complete box. Hardware prevents it from interfering with other programs or with the operating system. Because OS/2 never presents a program from immediately displaying in your code. This means you may need to create the entire system. As such, only one program will run. These simple, beautiful programs can work down long, which means, in this day, there should be little of this in.

OS/2 completely redesigns the way hard disks work. The new RPTs (High Performance File System) allows you faster access, and long filenames like the IBM Caching is now better than any other from work as a utility like the common PC-Tools (DOS built-in Cache). Under DOS, no other system in large files is reasonably fast. Since, RPTs has this problem.

OS/2 (and NT for that matter) will use the technology of the OS/2, which is a new CPU. OS/2 applications would



the disk is another. The smaller the better.

The sectors per track, e.g. 98, is the most of 333-bit sectors and also help by with each revolution of the disk. The more per track, the more can be read per revolution. (Locally distributed at 5000-8074)

However, under 650/2, 900/1 is faster than the other type of interface because 650/1 can do better work while the 900/1 fast adapter is working.

The case for IDE

The three types of disk IDE, ESDI and SCSI are not always the same. The three types of host adapters card, however, vary widely in cost. IDE host adapters are only \$87. The price of the complete IDE package is far less frequent.

IDE drives usually are not standard. The system normally will not match drive. Even failure in manual operation. Some users can even damage the drive when you try to replace the incompatible drive. Host drives that follow the ATA standard, such as Master, drive can should be able to replace easily.

You can have to reset two IDE drives. If you need more space, you must replace the smaller drive.

With IDE, you usually cannot recover damaged formatting information in the file. However, Master, Region and Western Digital let you track the level of data and avoid sending the drive back to the factory.

So far only Compaq lets you double the capacity and to test the drive surface.

The problem with most IDE drives is they don't follow any standard. This means they may cause trouble now or down the road.

IDE drives are the best choice when you are on a budget.

The case for ESDI

ESDI are the most flexible type of drive to install. All drives conform to the standard so you can mix and match drives from different manufacturers. All the drives you need a more beautiful read 528/2 (4.0 ESDI) controllers work exactly the same and a typical good IDE controller would be the Ultrastar 100 for \$176.

Unfortunately, PC Magazine just declared these obsolete. Already in the USA, ESDI drive prices have started to rise in cities between some \$400 to some leaders and finally to find upgrade ESDI drives over the available price.

If you have no time to waste and want to get 528/2 working quickly and smoothly then ESDI is the way to go.

The case for SCSI

SCSI is complex and the most difficult to get working, either on SCSI or CBI/2. The SCSI host adapter has to run only hard disks but other types. For example, printers, tape tape backup, CD-ROMS, scanners, etc. The big advantage of SCSI is you can add other new devices without requiring a lot of money (provided) in your system due to more trouble through the system even being on some disk drive. SCSI offers types of your system, you can have up to about two.

First party SCSI SCSI host adapters are able to work independently allowing the CPU to work on other tasks. Under DOS the CPU goes into a sleep waiting for the disk to finish fast under CBI/2. The CPU does other useful work. This independence is what makes SCSI so fast under CBI/2.

Even SCSI host adapter cards is generally reliable when it makes a mark. There is no off-of standard for how the host adapter looks to the computer though there are rigid standards for how the host adapter and the drivers communicate. The driver set from the manufacturer is usually the best. SCSI host adapters, usually makes choice of drive and level makes the drive for them.



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Many of you have heard that Internet is for university and government types, and it's a cryptic monster that only a tiny gang can navigate. While Internet began as a university/government network, it is also for the rest of us. The myth that Internet is the great, unmanageable, cryptic monster comprehensible by only the tiny elite is just that, a myth.

The Hitchhiker's Guide to the Internet

BY T. D. QUAY

Internet is used predominantly by many people who do this, even relatively easily in their homes. Internet users I'm familiar with include an editor of a publishing magazine, a professor of creative writing, historians, business writers, someone, and regular people like you. Internet is no more difficult or alien than most other network services and uses.

That's fine, you say, but what does Internet have to offer that I get out of it? These are the questions I hope to answer.

What is Internet?

Internet is a global information network with nodes in over 50 countries that is not controlled by any one organization or institution. The net is not a commercial service being funded by the marketing services and the advertising agencies who in turn are a financial net. The fact that a network can do large-scale work as an informal group of individuals, group members, and nodes will be quite amazing, and indeed will be for the future of electronic technology. As our new partner:

I stumbled into it, I didn't realize the net was so vast and accessible... Some of the most exciting things about Internet is the integrated nature of it, it's like a new city.

And it is, with approximately three million nodes, over 1000 user groups (Usenet), over 100 public accessible sites containing as much as a million files each, and a host of other applications. While it is impossible to cover all the offerings in this article, we can gain a feel for the net's services through our categories.

Usenet: The Internet News Groups
Usenet, also known as Usenet, is a network of news groups (Usenet) that are distributed across the net. Usenet is a distributed bulletin board of over 1000 news groups (Usenet) on a vast range of topics, with new groups being added almost daily. Usenet news can be found on the net, with the largest concentrations to be found in the U.S., Canada, Europe, Australia, and Japan.

These news groups can be either unmoderated or moderated with moderated groups being the more. The topics range from computer special interest groups, to religious groups, scientific topics, business philosophy, the arts, and more. If you're into Internet browsing, you can find there is a group for you. If you're into the Internet, there is a group for you. If you're into the Internet, there is a group for you. If you're into the Internet, there is a group for you.

In Usenet, you're in a (news) group with people all over the world.

I am constantly amazed at the range and depth of information available on Internet. The news groups allow me to stay on top of the latest developments in a diverse number of areas.

So how does Usenet work? The user service is the network of news groups using a news reader program that allows the user to read and post to a group. News is distributed through the network, with copies of the posts being stored in the net. The user can then read the posts and post to the group. The user can also post to the group. The user can also post to the group. The user can also post to the group.

all posts of a specific net. This is a moderated news group, one that is moderated by a moderator. The moderator is a person who is responsible for moderating the group. The moderator is a person who is responsible for moderating the group. The moderator is a person who is responsible for moderating the group.

Internet Mail Groups
While Usenet postings are very public, they are posted to a public list. In the U.S., mail groups are most popular for discussion. In order to join a mail group,

you must subscribe to it. Some lists are moderated, with only those users having the permission being allowed to subscribe or moderate their subscription. An example of this is the Usenet service mailing list, where the members must apply for permission to subscribe to the net and to receive other members' mail.

There are currently over 1000 lists on the net, covering a wide range of topics. These are lists devoted to everything from religion, to science, to the latest in technology. There are also lists for everything from religion, to science, to the latest in technology. There are also lists for everything from religion, to science, to the latest in technology.

Anonymous FTP

Anonymous FTP is the term used to describe both the software and the network that allows the user to access public domain files on the net. The user can access the files on the net. The user can access the files on the net. The user can access the files on the net.

Many FTP sites contain large amounts of public domain software and hardware, many of which are not publicly available. The user can access the files on the net. The user can access the files on the net. The user can access the files on the net.

Also accessible to many FTP sites are Usenet. Usenet groups are Usenet. Usenet groups are Usenet. Usenet groups are Usenet. Usenet groups are Usenet. Usenet groups are Usenet. Usenet groups are Usenet.

Archie: The Internet File Finder

So how do you find the file you want among a million files spread over 1000 FTP sites? You use Archie. Archie is an automatic directory service for locating files on the net. Archie is an automatic directory service for locating files on the net. Archie is an automatic directory service for locating files on the net.

can then use anonymous FTP to download the file from the specified site.

Internet e-Mail

Consider offering e-mail services using Internet mail. Internet mail is a service that allows the user to send and receive e-mail. Internet mail is a service that allows the user to send and receive e-mail. Internet mail is a service that allows the user to send and receive e-mail.

Internet mail is a service that allows the user to send and receive e-mail. Internet mail is a service that allows the user to send and receive e-mail. Internet mail is a service that allows the user to send and receive e-mail. Internet mail is a service that allows the user to send and receive e-mail.

So how do you find the file you want among a million files spread over 1000 FTP sites? You use Archie. Archie is an automatic directory service for locating files on the net. Archie is an automatic directory service for locating files on the net. Archie is an automatic directory service for locating files on the net.

Online Library Catalogues

One can access a wide variety of online library catalogues through Internet. These catalogues provide access to the net. These catalogues provide access to the net. These catalogues provide access to the net.

Accessing Internet

So how do you access Internet? You use a computer. You use a computer. You use a computer. You use a computer. You use a computer. You use a computer. You use a computer.



Continued on page 22

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Continued from page 109

The Autodesk LTZ is the single \$2995 LTZ from selection and the LTZ is the basic or LTZ version with the same price \$2995.

None of the drivers you attach to the SCSI bus adapter could potentially be working as well; the software is ensuring there must be coordination. The most successful standard way of doing this is called SCSI. Before you buy any SCSI equipment, make sure it has SCSI drivers for both DOS and OS/2.

Because SCSI is so reliant on up-to-date hard-party drivers, it is doubly important you visit us in the maintenance section. Doubly, though, since the interface between the hard disk and the host adapts to us well manufactured, you can lose any kind of disk you want your machine. You only need to be careful with the host adapter and make sure it's compatible.

Pick H32 when you want the fastest CPU performance, and the most basic flexibility in addressing devices.

0-9

Bill Gates, chairman of Microsoft, squares that. COBOL will not replace C++ or the medium for developing software. Some packages are already using the C++ and Java code on COBOL—e.g., SFT SSM (Software Developers Inc), CorelDraw and the Windows 95. COBOL is also becoming important in multimedia—e.g. to store images like audio, animation, and computer-generated graphics.

They feature CD-ROMs by far and the NBC 300 features hard drive. NEC also makes more low-cost 300s on average than does. People have also had success under SCSI with Seag and Toshiba. Your best chance of success is with the Sanyo 1500 from adapters and SCSI drives. Actual success rates come with a separate proprietary SCSI. Your adapter that would make you waste such changes may not be better.

Before you buy, verify the CD-ROM drive drives will connect with your SCSI hard disk drives. IBM publishes a list of officially supported drives, but happily, with a bit of sleuthing, almost any drive can be made to work.

Abstract

I suspect Googlebot is not indexing on CN72 as well as it should. My proxy California IP 40 will stay clear of any work under CN72. I have noted in that a third-party driver. I reported after one hour that the system company and found three types malware driver could remove the new driver.

[illegible]

There are other choices between those two extremes. Again, surprisingly, there's just one choice under 4000 in the price column in selecting hardware: SCSI host adapters in general do not share a SCSI bus adapter with the hard disk. This is because the very best of the tape and disk are both good, full buses, and would share a single SCSI bus otherwise.

CHL-1 differs not only in using tape drives. Adapted and shared are the ACP/MSB drivers for tape readers CHL-1. However, we are still a work in progress, not a standard case law.

1000 1000 1000

The sales figures for a 3.5L would be very hard to believe. I paid \$1000 for a 3.5L in 1994 and it was a lemon. There are so many of these cars already recalled somewhere there will always be a way to get them out from circulation.

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IBM cards don't communicate. IBM's OS/2 currently supports neither LHA's (OS/2) . These are the best bet for future NT support.

[illegible]

People have sold me cheap second OS/2-based systems. Then when they added it up and compared it with the cost of a single Windows-compatible computer, they decided they did not need it after all. As more people start to use OS/2, the prices of the necessary hardware will fall. This will lead to more people buying OS/2 equipment, which, in turn, will lead to lower prices and

It was not that long ago that B&W cost over a million dollars a magazine. Now it runs about \$300.

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- 1. Get a 486 motherboard, or one that can be upgraded to a 486.
- 2. Make sure your motherboard will accept at least 32 MB RAM. Greater postings in MHz require more.
- 3. Get an EISA-compatible video accelerator, such as the ATI Graphics Vision or Graphics Ultra.
- 4. Use an Adaptor 1502 or 1542 SCSI host adapter (or some third party).

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Computer Training

How to get your money's worth

BY ROBERT P. FORD

Whether computer technology training is delivered by your own staff, or conducted by outsiders, the inclusion of it is becoming increasingly important.

At budget times, however, it may seem that the benefits of the training will not justify the costs. The inclusion process helps to justify the costs.

Training courses offered by private companies can cost from \$150 to \$400 for each individual each day. A specialized trainer will fill out the lower end of the range while advanced technology, such as CASE tools, can run to the higher end. Course fees, the cost of time away from the office and possible travel expenses add up to a significant cost.

Time Matters

If you are spending time and money on a course, there are several number ways to make your investment:

- Attend numerous on a course because they deliver a course and are out of your shop.
- Drop a rule concerning knowledge of the new technology from a course.
- Send your staff members on a course because they have no training due this year but need to be well up.
- Send someone to a course that covers a technical subject of training that is not on one of the employees.

Meeting Objectives

Before the course is taken, the employee and the manager should do everything possible to ensure the course enables the employee to meet business objectives. If the course does not directly help you build or maintain your business, question that course.

Let it control you are paying for a course in specific skills needed for your business. How do you know you or someone else you're paid for?

To make sure the course has done everything correctly, look for quality in the following areas:

- Insurance
- Facilities
- Equipment
- Content
- Reference materials/training aids

Rate the Instructor

How do you rate an instructor? It is very likely that the instructor will know more than you, but how well are their knowledge and experience commensurate? When evaluating an instructor, ignore personality and focus on technique or the facts thereof. An instructor you really enjoy listening to may be teaching you nothing. A person with whom you'd never share a meal may be the best instructor you've ever seen. (See feature.)

Here is a sample evaluation form to use at such. The scale is out of five in strongest favor, rating five to not at all. If you are not completely sure, skip the question area.

Sample Course Evaluation Form

Name: _____ Instructor: _____
 Dept: _____ Course title: _____
 Date: _____ Course fee: _____
 Course fee: _____

What you cost of the course was: _____ necessary course _____ necessary course _____ new knowledge

Did the most valuable aspects of the course:

Did the topics you that will be most useful in the job:

Using the scale below, please rate the following categories:

1 = lowest, 5 = highest, 3 = average

CATEGORY	Rating	Comments
Practical material (technical details covered)		
Practical material		
Quantity of course (appreciated)		
Teaching style (hands-on/lecture)		
Quality of material		
Quality of instruction		
Instructor personality and attitude		
Overall Course Rating		
Additional Comments:		

Tips for education departments:

- Send this form to the students on the day they return from the course.
- If there is a word that the form is returned, send another.
- Repeat this weekly until you receive a completed form.
- Review the results with the students. Make sure to check with the employee that it's OK to do a transfer the completed evaluation form.
- Tell off who takes course mainly when it is a transfer has to do to get their way of life. This will take work, it is best to go to departmental meetings and present the criteria for a good course.

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Course Name	Credits	Units	Fee
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WordPerfect 6.0	10	10	\$150
WordPerfect 6.1	10	10	\$150

SPREADSHEETS

Lotus 1-2-3 3.0	10	10	\$150
Lotus 1-2-3 4.0	10	10	\$150
Lotus 1-2-3 5.0	10	10	\$150

OPERATING SYSTEMS

OS/2	10	10	\$150
Windows 3.1	10	10	\$150

DATABASES

dBase III Plus	10	10	\$150
dBase IV	10	10	\$150

PROGRAMMING

Visual Basic	10	10	\$150
Visual Basic	10	10	\$150

COURSE PLANS

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WordPerfect 6.0	10	10	\$150
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Newsbytes

New For Macintosh: Adobe Premiere 2.0

MOUNTAIN VIEW, CALIFORNIA, INC.—Adobe Premiere version 2.0, the enhanced version of the Adobe software, placed second in the rankings of QuickTime movies on the Macintosh, has been announced by Adobe Systems. Adobe says the product is geared toward making it easy for anyone to start working with moving images.

Adobe's Premiere is geared toward creating moving video footage, audio motion, still images, and graphics to create QuickTime digital movies. Adobe says digital animations can be inserted between video clips, still images, animation, and audio including different types: page layout, text, and more. Premiere also offers picture filters which can be used to create color, chromatic, and other effects.



other special effects. QuickTime movies produced with Premiere may be viewed at variable rates up to full screen, using any QuickTime-compatible Adobe video.

Adobe says the new version offers users professional features such as software compositing with high-end editing systems and a 3D camera. Premiere's features include: multi-layered compositing and 3D effects. Premiere's features include: multi-layered compositing and 3D effects.

The new version of the product supports Society of Motion Picture and Television Engineers (SMPTE) time code for professional video and offline editing the company added.

Contact Adobe Systems, 4100 860-2000

Continued from page 20

Contributors

Although IBM has been under considerable fire for such reports of AIX 3.2 due to possible downgraded changes and some compatibility problems, its hardware is top

quality and a very high performance. While IBM may not believe that its machines are flawless, many users agree. IBM has also moved to Detroit. By 1993, it is reportedly going open systems with considerable responsibility and excellent performance.

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U of T Students Design Futuristic Portable Computers

CHICAGO, CALIFORNIA (ENR)—Apple is soliciting ideas from third-year students of the University of Toronto (U of T) to design portable computers. The company offered each of more than 100 U of T students a cash prize of \$10,000 for the best design. The competition is open to all students of the U of T who are currently in their third year of study. The competition is open to all students of the U of T who are currently in their third year of study.

A. Jay Weintraub, manager of the University of Toronto Design Program, said that the competition is open to all students of the U of T who are currently in their third year of study. The competition is open to all students of the U of T who are currently in their third year of study.

Weintraub said that the competition is open to all students of the U of T who are currently in their third year of study. The competition is open to all students of the U of T who are currently in their third year of study.

any products are the market leader. Weintraub said.

Apple requested each design team to submit a design for a portable computer. The design should be a portable computer. The design should be a portable computer.

Apple said that the competition is open to all students of the U of T who are currently in their third year of study. The competition is open to all students of the U of T who are currently in their third year of study.

A typical computer for the competition is a portable computer. The design should be a portable computer.

The competition is open to all students of the U of T who are currently in their third year of study. The competition is open to all students of the U of T who are currently in their third year of study.

New For Macintosh: Logitech Fotoman Digital Camera Ships

BERKELEY, CALIFORNIA (ENR)—Logitech Inc. is now shipping the Fotoman digital camera for the Macintosh.

The Fotoman allows users to take snapshots and download them directly into their computer. The camera is a portable computer.

The Fotoman camera has a built-in flash and a built-in image compressor. The camera is a portable computer.

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Contact: Logitech (415) 712-4700 or (800) 831-1717.

New For Macintosh: Microsoft Works 3.0

REDMOND, WASH. (ENR)—Microsoft has announced Works 3.0, which is a portable computer.

Microsoft said that the competition is open to all students of the U of T who are currently in their third year of study. The competition is open to all students of the U of T who are currently in their third year of study.

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